GSM-4000

GSM, SMS controller for automatic switching of devices.

GSM-4000
Switches relay On and Off with SMS message
Local relay triggers when inputs are activated
4 Digital inputs and 2 Relay outputs
Unlimited range. Device can be operated from anywhere as long as cell phone network is available.
ELSEMA

Features

- Switches relay with SMS messages.
- Sends SMS message when inputs are activated.
- Supports NO or NC inputs.
- Easily programmed with user friendly computer software.
- Operates from anywhere if GSM network is available. Unlimited range!
- Ignores unauthorised numbers
- 4 digital inputs for sensors or switches.
- Built-in rechargeable back-up battery. Lasts for up to 24hours.
- Secure. Password protected
- 12 Volts DC power pack included

Application

- Automatic switching pumps, irrigation systems.
- Security alarm, fire alarm, temperature monitoring.
- Endless applications.

Description

The GSM-4000 has 4 inputs which can be set as NO, NC or Disabled. The GSM-4000 can be programmed to send an SMS message when any of the inputs are triggered or recovered. There are 2 relay outputs. Relay 1 can be programmed to switch "On" when any of the inputs are triggered and relay 2 can be switched "On" by SMS message. The GSM-4000 also has a microphone (mic) and a speaker connection. It can be programmed so that when an input is triggered, the GSM-4000 makes a call to the programmed numbers and create a 2-way voice communication.

All configurations are done through a user friendly computer software. The GSM-4000 connects to the computer through a standard USB connection.

The GSM-4000 works on GSM network therefore the receiver can be activated from anywhere in the country where GSM network is available. For example you can open your gate or switch on your kitchen lights in Sydney from Melbourne by sending a simple SMS message.

The GSM unit can be armed and disarmed by simple SMS message.

12 Volts DC Power Pack Included

Technical Data

Power Source	12 Volts DC
GSM Frequency	900/1800MHz
Output	Common (C) and Normally Open (NO) relay outputs rated at 3A, 240VAC.
Shipping Weight	690 grams
Dimensions	155 x 95 x 28mm.

Safety Instruction

Safe startup

Do not use the GSM-4000 in places where GSM equipment is prohibited or might bring disturbance or danger

Interference

Wireless equipment might interfere GSM network signals of the GSM-4000 and influence its performance.

Avoid using at Gas Stations

Do not use GSM-4000 at a gas station. Power off the unit when near fuels or chemicals

Avoid using near blasting areas

Please follow relevant restrictive regulations. Avoid using the device in blasting places.

Reasonable Use

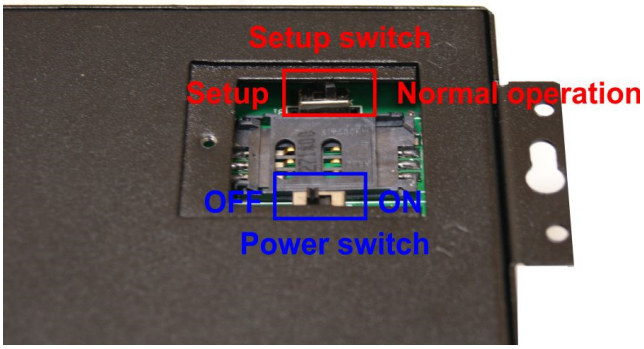
Please install the product at a suitable place as described in this manual. Avoid signal shielding by covering the mainframe.

Maintenance

All wiring and maintenance should be carried out only by qualified maintenance personnel.

Setup Instructions

1. The GSM-4000 is easily setup using the computer software provided.
2. For added security, there is and "On-Off" switch and a "setup" and "normal operation" switch. When the unit is connected to the computer please make sure that the switch is in setup position.
3. Make sure that after you have finished setting up the unit, slide the switch to normal operation mode.



4. The default password is 1234. It can be easily changed by the computer software
5. A two-way voice communication is possible when external mic and speaker is connected to the unit. A two-way voice communication established when:

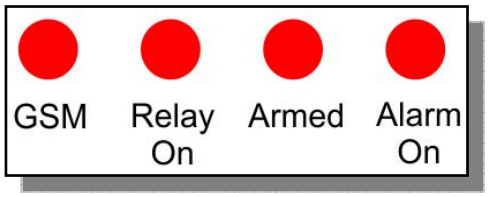
   a.) An authorised user makes a call to the unit or

   b.) The unit is programmed to dial a number when an input is triggered.

6. The backup battery inside the GSM-4000 **does not** control the output relays. If the supply to the unit is switched "Off" the 2 output relays will switch Off as well.
7. The GSM-4000 can only handle one alarm event at a time.

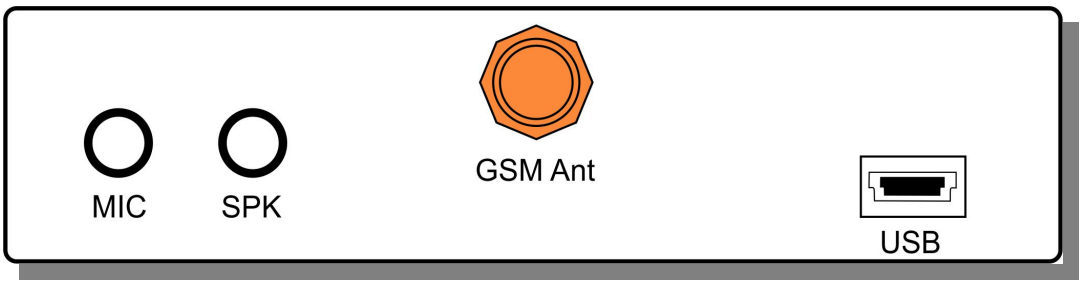
Connections and Display

LED indicators



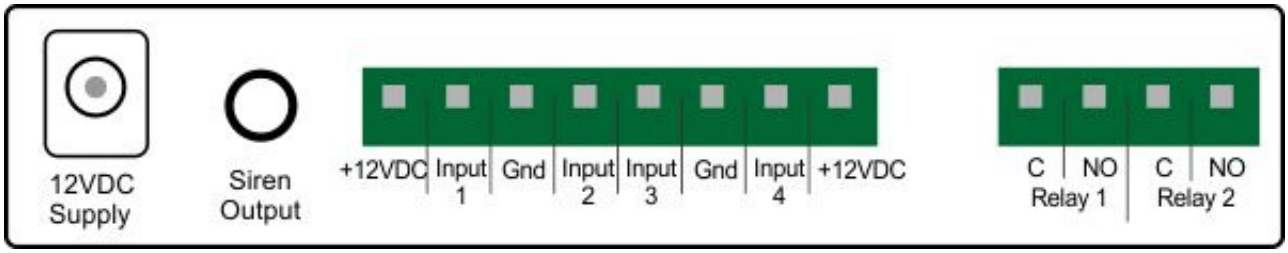
GSM	Network indicator: Flashing fast- Searching for a network. Flashing slowly - Successfully connected to the network
Relay On	Indicates switching of relay 1 or relay 2
Armed	"On" Unit is armed "Off" Unit is disarmed
Alarm	Alarm is activated.

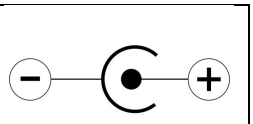
Antenna, USB and optional microphone and speaker



MIC	3.5mm socket for external microphone for 2-way communication. (optional)
SPK	3.5mm socket for external speaker for 2-way communication. (optional)
GSM Ant	Connect the GSM antenna provided. Use a high gain antenna if signal is poor.
USB	Connect to your COMPUTER for setup using the GSM-4000 software.

Inputs and Outputs



Supply	Connect the 12VDC power pack supplied with the GSM-4000 If siren is used, please make sure that the power supply is big enough to supply the GSM unit and the siren 
Siren	Siren or strobe light output. This outputs will activate siren or strobe light when alarm is activated. (optional)
+12VDC	12VDC to supply sensors
Input 1	Digital input 1. Connect sensors, push buttons, switches etc. If it is not used, please set it as Disabled in the software
Gnd	Ground
Input 2	Digital input 1. Connect sensors, push buttons, switches etc. If it is not used, please set it as Disabled in the software
Input 3	Digital input 1. Connect sensors, push buttons, switches etc. If it is not used, please set it as Disabled in the software
Gnd	Ground
Input 4	Digital input 1. Connect sensors, push buttons, switches etc. If it is not used, please set it as Disabled in the software
+12VDC	12VDC to supply sensors
Relay 1	Activates when any of the inputs are triggered. Rated at 3A at 240VAC
Relay 2	Activates by SMS message. Rated at 3A at 240VAC

SMS Commands List

SMS Commands	Function
AA	Arm the GSM-4000
BB	Disarm the GSM-4000
CC	Switch relay 2 "ON"
DD	Switch relay 2 "OFF"
EE	GSM-4000 status

Please note that all SMS commands should be in upper case and is preceded by a password. Below is an example: (password is 1234)

1234AA Correct

1234aa Incorrect

The user can arm, disarm, switch relay 2 "On" and "Off" and check the status of the unit by sending SMS messages.

- **ARM the Unit**

SMS Command	PwdAA ("Pwd" is your 4-digit password)
Return SMS	Armed

- **DISARM the Unit**

SMS Command	PwdBB ("Pwd" is your 4-digit password)
Return SMS	Disarmed

- **Switch relay 2 "ON"**

SMS Command	PwdCC ("Pwd" is your 4-digit password)
Return SMS	Output Relay Closed

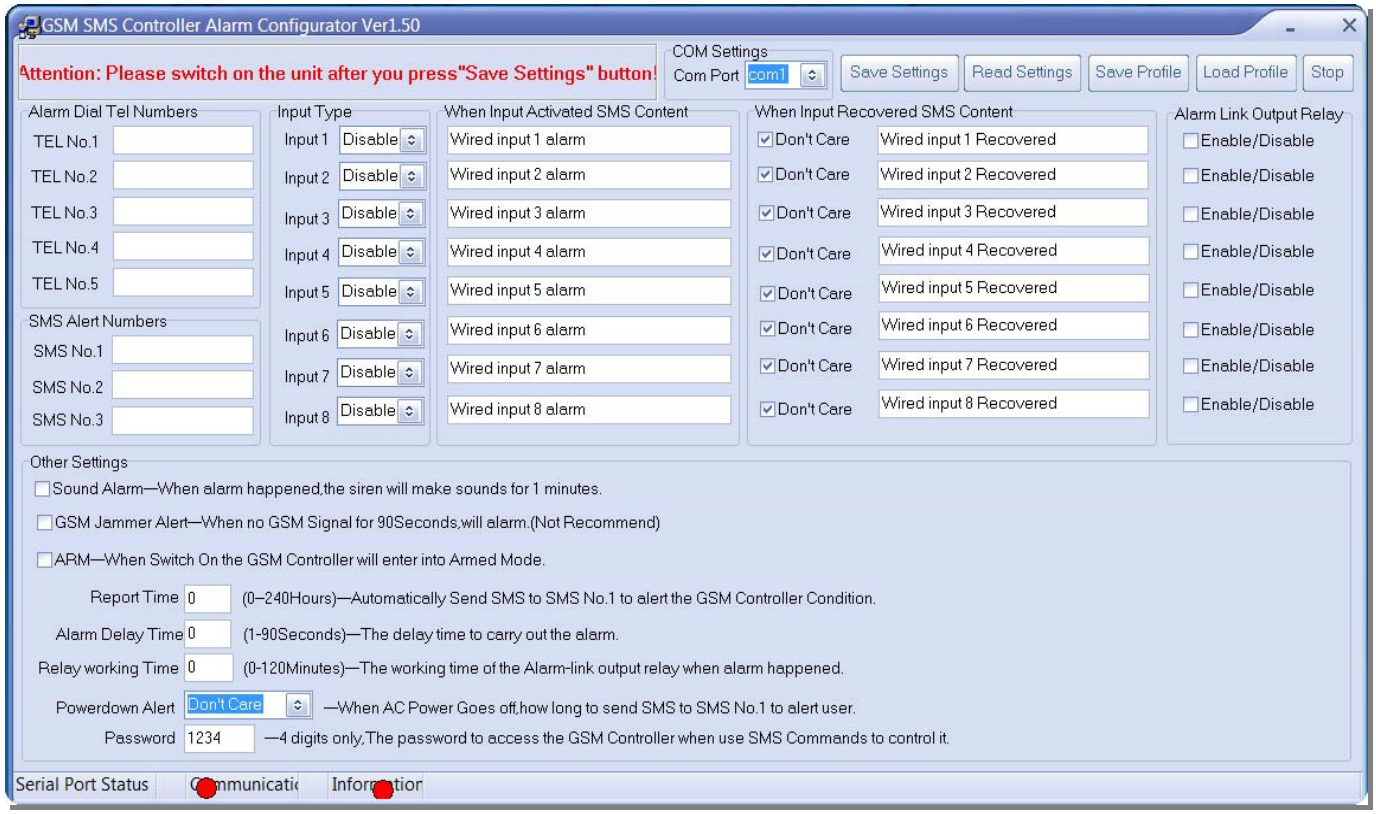
- **Switch relay 2 "Off"**

SMS Command	PwdDD ("Pwd" is your 4-digit password)
Return SMS	Output Relay Opened

- **GSM-4000 Status**

SMS Command	PwdEE ("Pwd" is your 4-digit password)
Return SMS	➢ Armed or Disarmed ➢ AC Power Ok or AC Power is failed ➢ GSM Value is "xx" (number depending on the GSM signal level) ➢ Output relay is Opened or Output relay is Closed

Computer interface software



Alarm Dial Tel Numbers	A call will be made to these numbers one after the other if any of the inputs are triggered. Calls will be made after SMS is sent to SMS Alert Numbers.
Input Type	Select Input Type: Normally Open (NO), Normally Closed (NC) or Disable. All unused inputs should be set as disabled.
When Input Activated SMS Content*	Type the SMS message which will be sent to SMS alert numbers when corresponding inputs are triggered. max 34 characters
When Input Recovered SMS Content	Type the SMS message which will be sent to SMS alert numbers when corresponding inputs are recovered. Tick "don't care" check box if you do not want to use this feature. max 34 characters.(The unit will not make a call when the input are recovered.)
Alarm Link Output Relay	When enabled, relay 1 will switch On when the inputs are triggered.
Sound Alarm	When enabled, the siren output will be activated for 60sec when any inputs are triggered.
GSM Jammer	If there is no GSM signal present for 90 sec, relay 1 will switch on for 4minutes and the siren output for 60sec. It's not recommended to enable this feature.
ARM	The GSM-4000 will automatically enter into armed mode on power up. If unchecked it will not arm on power up
Report Time	This option will send SMS message to the 1st SMS alert number every set period on the GSM-4000 status. Having 0 in this field will disable this feature.
Alarm Delay Time	Sets the delay time from input trigger to alarm switching.
Relay working time	Sets the off delay of relay 1 when any of the inputs are triggered.
Power Down Alert	Sets the time after which the unit will send SMS message when AC power switches OFF
Password	Password to access the GSM-4000 when using SMS commands. Default is 1234.

*In an event where the inputs are activated and held active, the GSM-4000 will only send one SMS message. It will send another message if the same input is recovered and triggered again. This makes it ideal to be used for monitoring temperature, moisture, humidity etc.

Computer Interface Setup

Please follow the following instructions carefully. Make sure that the "setup" switch is on setup and not "normal operation" and the power switch is in Off position.

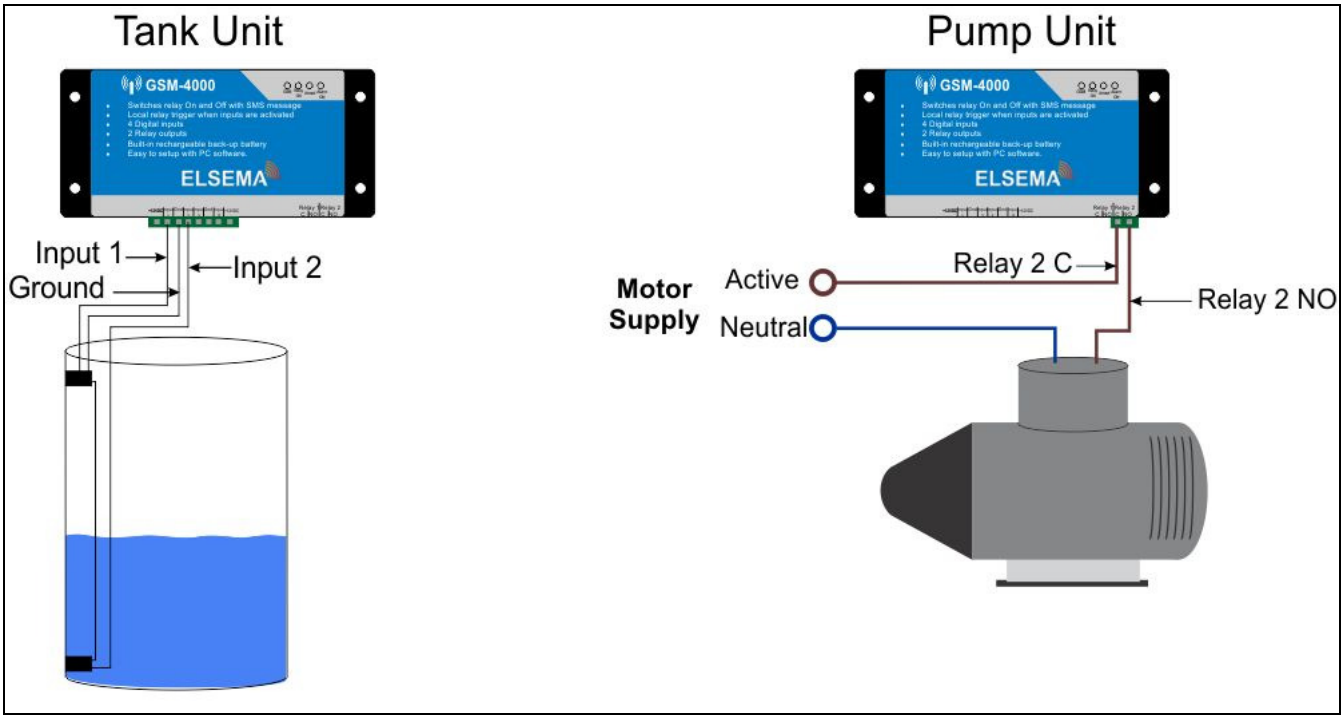
1. Connect the GSM-4000 to your computer. Do not switch the GSM-4000 ON yet.
2. Install the USB driver provided from the Flash on your computer. (CP210xVCPInstaller.exe). The driver can also be downloaded from Silicon labs website (CP210x).
3. The default COM selected should be COM3. If it does not work please see step 9.
4. Insert the SIM card into the SIM holder at the bottom side of the unit.
5. Now run the computer Interface software. It does not need installation.
6. Setup all the required parameters according to your application.
7. Click on the "Save Settings" button and after 2 secs switch on the GSM-4000. The On-Off switch is beside the SIM card holder. If the setup is successful, a pop up window will open. If the setup is not successful, you can try changing the COM ports. Correct COM port is indicated by the a green LED for communications at the bottom of the COMPUTER interface window.
8. Switch Off the unit and then disconnect the USB cable.

Follow step 9 if COM port 1-5 don't work.

9. a. Go to the device manage in your controls panel of your computer.
   b. Click on the Ports (COM &LPT)
   c. You should see the USB driver here. Make note the COM port number. The COM port number should be from 1-5. If it is not, go to properties and then change it. If you have to change the COM port setting, you will need to restart you computer.

Application 1

Below is an example of a fully automatic tank/pump control system using two GSM-4000. The pump and the tank can be any distance apart.



Setting up the tank and the Pump unit.

1. Connect upper level switch to input 1 of the Tank unit.
2. Program the tank GSM unit so that when input 1 is activated, it sends SMS "1234DD" (1234 is the default password. Please use your own password) to the SIM number on Pump GSM unit. This will switch "Off" the pump
3. Connect the lower level switch to input 2 of the tank unit.
4. Program the tank GSM unit so that when input 2 is activated, it sends SMS "1234CC" (1234 is the default password used as an example. Please use your own password) to the SIM number on Pump GSM unit. This will switch "ON" the pump.

Notes:

Make sure that in the Tank unit, the first SMS alert number is that of the SIM card in the Pump GSM Unit.

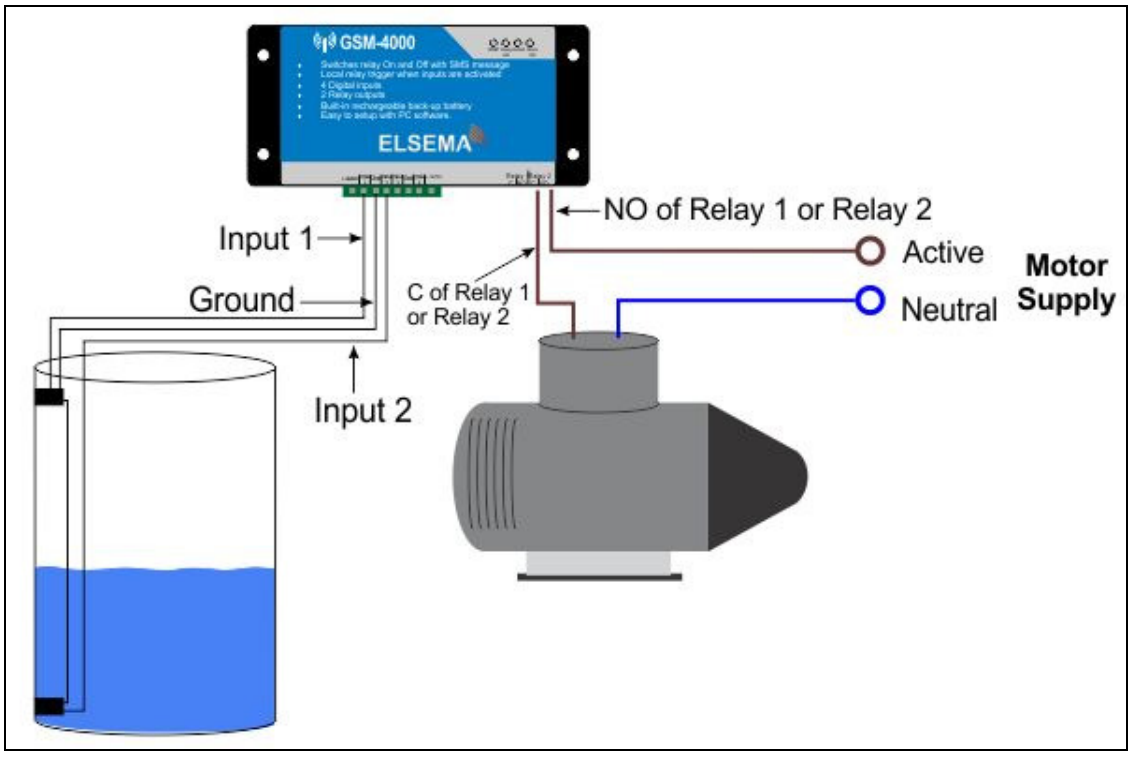
Application 2

Below is an example of a semi automatic Tank control unit. The GSM-4000 can be configured in 2 ways:

1. Switch On the pump for a certain period of time. The user should know how long it will take to fill the tank.
2. Switch pump On and Off with SMS messages after receiving the status of the tank.

In the 1st configuration the pump is connected to relay 1 of the GSM-4000. Input 1 is connected to the low level switch on the tank. When the tank is empty, relay 1 is activated for a certain period of time thus switching the pump On. The user can also have input 2 connected to a high level switch which will send the user an SMS message when the tank is full.

In the 2nd configuration, the pump is connected to relay 2 of the GSM-4000. Input 1 is connected to the low level switch on the tank. When the tank is empty, the user gets an SMS message. The user then sends a message to switch On relay 2 which switches the pump. When the tank is full the high level switch connected to input 2 will send an SMS message to the user telling the tank is full. The user then sends another message to switch Off relay 2 which switches the pump Off.



Application 1 and 2 are just illustrations of how the GSM-4000 can be used. The GSM-4000 can be used in many other ways depending on your imagination or your applications.

Optional

Optional microphone and Speakers can be connected to the GSM-4000 to create a 2-way communication under the following 2 conditions:

1. When any of the inputs are triggered. The GSM-4000 makes a call to the user
2. When an authorised user makes a call to the GSM-4000.

When installing siren and microphone, please make sure that the siren is as far away as possible from the microphone.

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